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FISHES OF SOOCHOW

By Tsen-Hwang Shaw

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The present study is based on some fishes from Soochow in the Zoological Museum of the Fan Memorial Institute of Biology. Most of the fishes were collected by Mr. Yuan-Ti Wu of the Soochow High School, Soochow. Others were obtained by Messrs. Tai-Yin Chia and Chin-Fu Wang of the Biological Laboratory of the Science Society of China, Nanking. Although the fishes of Soochow and Tai-Hu (lake) have been reported by Fowler and Bean in 1920[1], and by Fowler alone in 1924[2], it is still worthy for the present writer to make some additional notes on the fish-fauna of this particular region. In the following pages, a total of 42 nominal species are briefly described, of which 11 are for the first time recorded from Soochow and its vicinity. The following species are believed to be new to the science:

Culticula tchangi Shaw, sp. nov.

Hemibarbus soochowensis Shaw, sp. nov.

Notes on relative abundance are given by Mr. Wu.

The writer wishes to express his indebtness to Messrs. Wu, Chia and Wang for their interest and cooperation in making the collections.

GENERAL ACCOUNT OF THE SPECIES

The fourteen families of Soochow fishes are easily distinguishable as follows:

A. Ventral fin abdominal:
  a. Scales present:
    I. Abdomen serrated, barbels absent.....*Engraulidae* (p. 166)
    II. Abdomen not serrated, barbels present or absent.....
      .....*Cyprinidae* (p. 170)
  aa. Scales minute or absent.
    I. Barbels present:
      1. Dorsal and pectorals each usually with a strong spine, adipose fin absent if the dorsal is short.....*Siluridae* (p. 188)
      2. Dorsal and pectorals without a spine, adipose fin absent
        .....*Cobitidae* (p. 188)

1 Proc. U. S. Nat. Mus., LVIII, pp. 307-321.
2 Mem. As. Soc. Bengal, VI, pp. 503-519.

II. Barbels absent:
1. Adipose fin absent, scales decidious..*Hemiramphidae* (p. 190)
2. Adipose fin present, without scales.....*Salangidae* (p. 168)

AA. Ventral fins thoracic:
a. A single dorsal fin (elongate), ventrals present or absent.....
.....*Ophicephalidae* (p. 190)
aa. Two dorsal fins, the anterior one spinous:
I. Size small, posterior portion of dorsal and anal fins usually elongate.....*Osphronemidae* (p. 191)
II. Size large, posterior portion of dorsal and anal fins not elongate:
1. Ventrals closed together or united.....*Gobiidae* (p. 195)
2. Ventrals completely separated.....*Serranidae* (p. 193)

AAA. Ventrals wanting:
a. Body globe-like, scales absent.....*Tetraodontidae* (p. 196)
aa. Body eel-like:
I. Body laterally compressed, scales minute, dorsal with numerous spines,.....*Mastacambellidae* (p 169)
II. Body not laterally compressed:
1. Scales rudimentary, pectorals present.....*Anguillidae* (p. 169)
2. No scales, pectorals absent.....*Monopteridae* (p. 168)

Family **ENGRAULIDAE**

Coilia nasus Temminck & Schlegel

Coilia nasus Temminck & Schlegel, 1847, Fauna Japan. Poiss., p. 243, pl. 109, fig. 4; Günther, 1868, Cat. Fish., VII, pp. 405-406.

Mystus clupeoides Lacépède, 1803, Hist. Nat. Poiss., V, p. 467.

Coilia clupeoides Günther, 1868, Cat. Fish., VII, p. 404; Fowler & Bean, Proc. U. S. Nat. Mus., LVIII, p. 307.

This species the writer has not seen. The following notes are taken from Fowler and Bean: "Head, 6; depth, $5^2/_3$; D. III, 9; A. 83; abdominal scutes, 17+28; 60 (?) (pockets) scales in lateral row from shoulder to caudal base medially....Length, 133 mm."

Coilia ectenes Jordan & Seale

Coilia ectenes Jordan & Seale, 1906, Proc. U. S. Nat. Mus., XXIX, pp. 517-518, fig. 1; Jordan & Starks, 1906, Proc. U. S. Nat. Mus., XXXI, p. 516.

Five specimens (Nos. 3040, 5146-5149), 191 mm. to 300 mm. long.

D. II, 11 or 12; A. 94 to 101. Abdominal scutes varies from 43 to 49. Scales are not preserved in good condition.

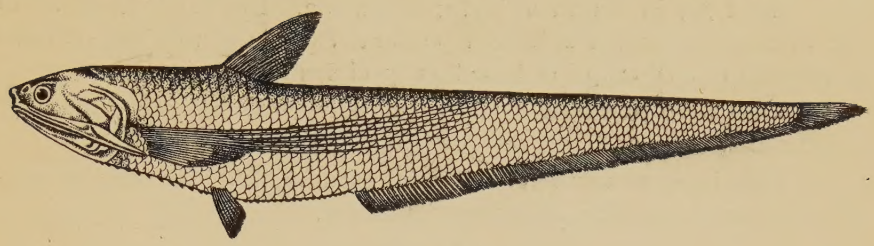

Fig. 1. *Coilia ectenes* Jordan & Seale

Fig 2. *Salanx cuvieri* Cuvier & Valenciennes

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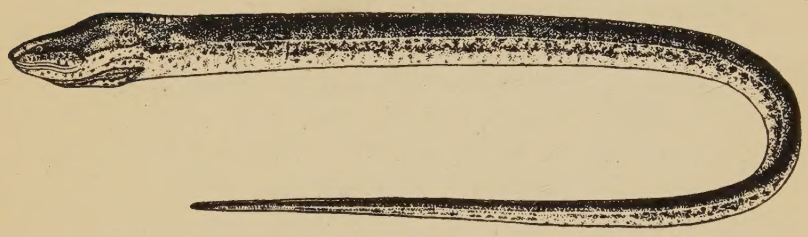

Fig. 3. *Fluta alba* (Zueiw)

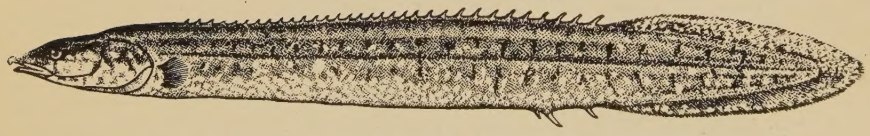

Fig. 4. *Mastacembellus sinensis* (Bleeker)

Head 7.9 in length of body; depth 6.3. Eye 5.4 in head; snout 3.8; interorbital width 2.8. Six pectoral filaments, reaching beyond origin of anal. Description based on specimen No. 3040.

Color silvery, dorsal side grayish black, ventral side somewhat brownish.

This is a common food fish in autumn, but it may be purchased from the market in spring or summer.

Family **SALANGIDAE**

Salanx cuvieri Cuvier & Valenciennes

Salanx cuvieri Cuvier & Valenciennes, 1849, Hist. Nat. Poiss., XXII, p. 360; Fowler & Bean, 1920, Proc. U. S. Nat. Mus., LXIII, p. 307-308.

Three specimens (Nos. 4303, 4304 & 5183), 88 mm. to 121 mm. long.

D. 12; A. 20 to 24.

Head 5.3 in length of body; depth 24. Eye 7 in head; snout 2.4; interorbital width 5.5. Description based on specimen No. 5183.

This slender fish is colorless. Adipose fin very small. Caudal fin washed with black. Posterior portion of dorsal fin above anal.

Common in late spring and early summer.

Salanx chinensis (Osbeck)

Albula chinensis Osbeck, 1765, Reise Ostindein, China, p. 309.

Salanx chinensis Günther, 1866, Cat. Fish., VI, pp. 205-206.

Leucosoma chinensis Fowler, 1924, Men. As. Soc. Bengal, VI, p. 506.

One specimen (No. 4305), 80 mm. long.

Head 5.1 in length of body; depth 13. Eye 5 in head; snout 3; interorbital width 3.1.

D. 17; A. 29.

Adipose fin very small. Dorsal fin entirely in advance of anal. Coloration similar to that of *Salanx cuvieri*.

Common in late spring and early summer.

Family **MONOPTERIDAE**

Fluta alba (Zueiw)

Muraena alba Zueiw, 1793, Nov. Act. Acad. Sc. Petropol, VII p. 299.
Monopterus javanensis Günther, 1870, Cat. Fish., VIII, pp. 14-15.

Fluta alba Fowler & Bean, 1920, Proc. U. S. Nat. Mus., LVIII, p. 308; Fowler, 1924, Mem. As. Soc. Bengal, VI, p. 506.

One specimen (No. 5172) measured 301 mm. from point of snout to tip of tail.

Head 12 in length of body; its depth 1.9 in its length, being greater than that of the body. Eye 10 in head; snout 5; interorbital width 7.1. Tail 3.7 in total length of body.

Body elongate, more or less compressed, tapering towards the tip of tail. Dorsal and anal fins indistinct. Pectoral and ventral fins absent.

Dorsal side brownish black, ventral side somewhat yellowish.

This food fish may be secured in ponds, canals, or rice-fields. Most common in late spring and early summer.

Family **MASTACEMBELIDAE**

Mastacembelus sinensis (Bleeker)

Rhynchobdella sinensis Bleeker, 1870, Versl. Akad. Amst., IV, p. 249.

Mastacembelus sinensis Fowler & Bean, 1920, Proc. U.S. Nat. Mus., LVIII, p. 321; Fowler, 1924, Mem. As. Soc. Bengal, VI, p. 519.

Ten specimens (Nos. 3047-3049, 5177-5182, & 6622), ranging from 125 mm. to 176 mm long (to end of candal fin).

Head 6.5 to 7 in length of body with candal; depth 9.3 to 11. Eye 7.7 to in head; snout 3.3 to 5.8; interorbital width 9.4 to 10.

Dorsal spine, 33; anal spine, 3. Scales minute.

Color (in spirit) dark olive above, paler below. Two pale lines one dorso-lateral side, running from the eye to post-anal region. Ventral side with numerous yellowish spots surrounded with darker network. Caudal region with small black bars.

Common.

Family **ANGUILLIDAE**

Anguilla japonica Temminck & Schlegel

Anguilla japonica Temminck & Schlegel, 1847, Faun. Japon. Poiss., p. 258, pl. 113, fig. 2.; Günther, 1870, Cat. Fish., VIII, p. 31 (under *A. bostoniensis*); Fowler & Bean, 1920, Proc. U. S. Nat. Mus , LVIII, p. 308; Fowler, 1924, Mem. As. Soc. Bengal, VI, p. 506.

Four specimens (Nos, 4306, 5141, 5142 & 6616), 324 mm. to 502 mm. long.

Head 3.1 to 3.3 in length to vent; depth 7 to 7.2. Eye 1.2 in head; snout 5.1 to 5.5; interorbital width 6. Distance between dorsal origin and anal origin 1.1 to 1.4 in head.

Body very elongate, compressed behind. Scales minute, linear in form, placed obliquely, often at right angles to others.

Color dark gray above and pale below. The chin and throat are much darker than other parts of the ventral side of the body.

A common food fish.

Family **CYPRINIDAE**

By means of the following key, the 18 known genera may be separated. It is understood that the generic characters are not wholly included in this artificial key.

A. Anal fin elongate, with more than 20 rays; abdomen compressed; lateral line slightly decurved:

- a. Body rather deep (elevated), scales large.....*Chanodichthys* (p. 181)
- aa. Body not very deep, scales of moderate size,.....*Culter* (p. 179)

AA. Anal fin of moderate length, less than 15 rays:

- a. Body deep and compressed, size not very large, lateral line nearly straight:
  - I. Dorsal fin of moderate length, with less than 15 rays .....*Paracheilognathus* (p. 183)
  - II. Dorsal fin rather long, with more than 15 rays..... .....*Acanthorhodeus* (p. 183)
- aa. Body less deep, size moderate or large:
  - I. Scales small, about 115 in the lateral line; lateral line decurved, extending along the middle of tail..... .....*Hypophthalmichthys* (p. 177)
  - II. Scales of moderate size; lateral line abruptly bending downward above the pectoral, passing backward, making a weak curve, and running along the middle of the tail .....*Hemiculter* (p 179)

AAA. Anal fin short, with less than 10 rays :

- a. Barbels present, of moderate length :
  - I. With two pairs of barbels, scales less than 40, lateral line nearly straight.....*Cyprinus* (p. 172)

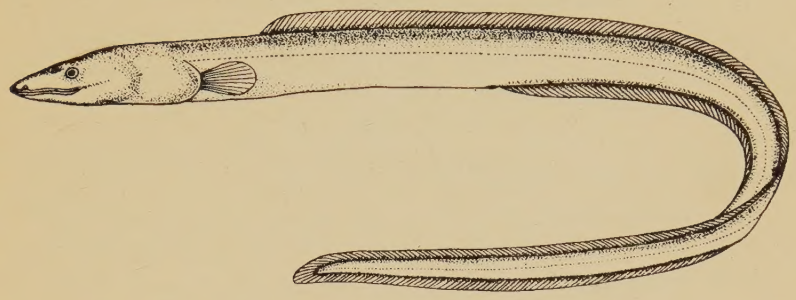

Fig. 5. *Anguilla japonica* Temminck & Schlegel

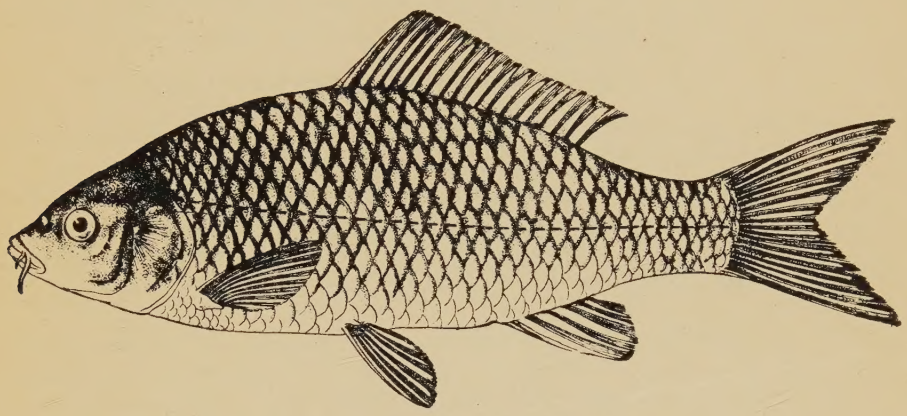

Fig. 6. *Cyprinus carpio* Linnæus

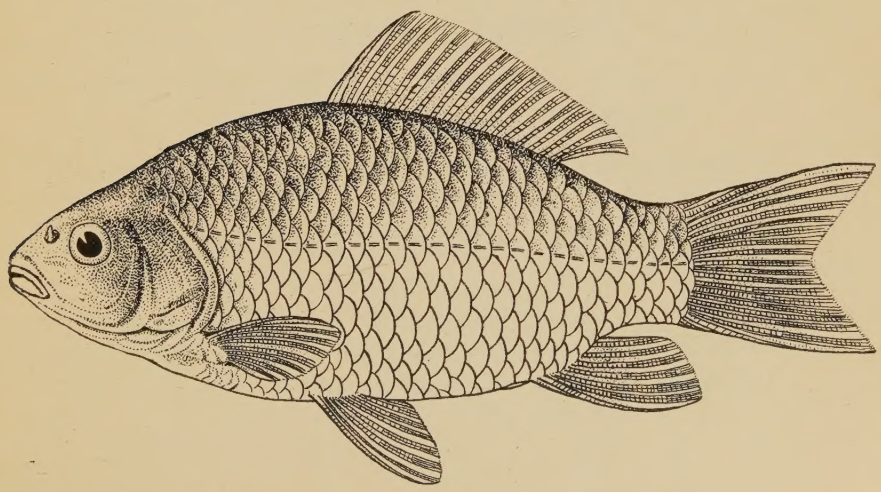

Fig. 7. *Carassius auratus* (Linnæus)

II. With only a pair of barbels:

1. Sizes maller, scales-less than 45; snout concave above, laterale line slightly decurved.....*Pseudogobio* (p. 186)

2. Size larger, scales more than 45; snout not concave above, lateral line straight:

* Pharyngeal teeth uniserial.....*Hemibarbus* (p. 183)

** Pharyngeal teeth triserial.....*Barbus* (p. 173)

aa. Barbels present, but very minute; lateral line decurverd; body elongate.....*Squaliobarbus* (p 175)

aaa. Barbus absent:

I. Size small, less than 100 mm. in length:

1. Lateral line present.....*Pseudorasbora* (p. 175)

2. Lateral line absent.....*Fusania* (p. 177)

II. Size moderate:

1. Body compressed and elevated; dorsal fin long; scales less than 30, lateral line nearly straight; mouth terminal .....*Carassius* (p. 173)

2. Body compressed, but less elevated; scales more than 45; mouth terminal.....*Culticula* (p. 176)

3. Body slightly compressed, scales about 40; mouth inferior and arched.....*Sarcocheilichthys* (p. 186)

III. Size rather large; lateral line slightly decurverd; scales about 42:

1. Pharyngeal teeth molor like; pectorals and ventrals black.....*Myloleuciscus* (p. 173)

2. Pharyngeal teeth not molor like; pectorals and ventrals not black.....*Ctenopharyngodon* (p. 175)

Cyprinus carpio Linnæus

Cyprinus carpio Linnæus, 1758, Syst. Nat., 10th ed., p. 320; Günther, 1868, Cat. Fish., VII, pp. 25.26;.

Two specimens (Nos. 3072 & 6620), measured 148 mm. and 112 mm. long respectively.

Head 4.1 in length of body; depth 3.1. Eye 4 in head; snout 3.3; interorbital width 2.6.

D. II, 19; A. II, 6. Scales 36 or 37.

Color, bluish black above, pale below.

A common food fish, with four borbels.

Carassius auratus (Linnæus)

Cyprinus auratus Linnæus, 1758, Syst. Nat., 10th ed., p. 322.

Carassius auratus Günther, 1868, Cat. Fish., VII, pp. 32-33; Fowler & Bean, 1920, Proc. U. S. Nat. Mus., LVIII, p. 310; Fowler, 1924, Mem. As. Soc. Bengal, VI, p. 508.

Four specimens (Nos. 3053-3055, & 6619), measured 119 mm. to 220 mm. long.

Head 3.5 to 3.6 in length of body; depth 2.3 to 2.8. Eye 4 to 5.5 in head; snout 3.3 to 4; interorbital width 2.3 to 2.5.

D. II, 18 or 19; A. II, 6. Scales 26+2.

Color, bluish gray above, pale below.

A very common food fish, without barbels.

Barbus schlegeli Günther

Barbus schlegelii Günther, 1868, VII, p. 135; Fowler, 1924, Mem, As. Soc. Bengal, VI, p. 510.

This species the writer has not seen. The following notes are taken from Fowler's description: "Head 3 $^2/_3$; depth 3 $^2/_3$; D. III, 7, 1; A. III, 6, 1;.....scales 44 in lateral lin to caudal base and 3 more on latter;.....snout $2\frac{1}{2}$ in head; eye $5\frac{3}{4}$;.....interorbital $3^1/_6$;. Body elongate, slender, well compresses, deepest at dorsal origin, edges all convexly rounded.....Snout conic, well protruded beyond lower jaw; long as wide.....Mouth inferior, rather small... Interorbital convex....Brown, on back base of each scale with dark spot. About 6 rows of dusky small spots on caudal. Dorsal sparsely and irregularly spotted with dusky. Lower surface of body paler than upper. One example, 327 mm."

Myloleuciscus aethiops (Basilewsky)

Leuciscus aethiops Basilewsky, 1855, Nov. Mem. Soc. Nat. Mosc., p. 233, pl. VI, fig. 1.

Myloleuciscus atripinnis Garman 1912, Mem. Mus. Coup. Zool., XL, p. 116; Fowler and Bean, 1920, Proc. U. S. Nat. Mus , LVIII, p. 313.

One specimen (No. 5140), measured 128 mm. in length.

Head 3.5 in length of body; depth 4. Eye 4.3 in head; snout 3.7; interorbital width 2.3.

D. II, 8; A. II, 8. Scales 42.

Fig. 8. *Ctenopharyngodon idella* (Cuvier & Valenciennes)

Fig. 9. *Squaliobarbus curriculus* (Richardson)

Fig. 10. *Pseudorasbora parva* (Temminck & Schlegel)

Ventral side pale, other parts grayish. Dorsal side, especially that of head, darker. Pectorals and ventrals nearly black, other fins lighter.

Food fish, also admitted to the fish-ponds.

Ctenopharyngodon idella (Cuvier & Valenciennes)

Leuciscus idella Cuvier & Valenciennes, 1844, Hist. Nat. Poiss., XVII, p. 362.
Ctenopharyngodon idellus Günther, 1868, Cat. Fish., VII, pp. 261-262.

Five specimens (Nos. 3034-3036, 3721, & 5128), measured from 154 mm. to 310 mm. long.

Head 3.6 to 3.8 in length of body; depth 3.6 to 4. Eye 4.5 to 6.2 in head; snout 2.7 to 2.9; interorbital width 1.9 to 2.

D. II,8; A. II,8. Scales varies from 38 to 42.

Color dark brown above, yellowish below.

Ctenopharyngodon is closely related to *Myloleuciscus*, differs chiefly in their pharyngeal teeth.

A common food fish, domesticated in the fish-ponds.

Squaliobarbus curriculus (Richardson)

Leuciscus curriculus Richardson, 1846, Ichth. Chin. p. 299.
Squaliobarbus curriculus Günther, 1868, Cat. Fish. VII, p. 297.

One specimen (No. 5129), measured 220 mm. long.

Head 4.8 in length of body; depth 4.5. Eye 5.1 in head; snout 3.4; interorbital width 2.2.

D. II. 8; A. II, 9. Scales 46.

Color silvery. Scales, except those on the lower portion of the body, have a dark base.

This fish has a pair of minute barbels at the corner of its mouth.

Pseudorasbora parva (Temminck & Schlegel)

Leuciscus parvus Temminck and Schlegel, 1847, Faun. Japon. Poiss., p. 215, pl. 102, fig. 3.
Pseudorasbora parva Günther, 1868, Cat. Fish., VII, p. 186; Fowler, 1924, Mem. As. Soc. Bengal, VI, p. 511.

Thirteen specimens (3082-3084, 4310-4314, 5164-5166, 6623-6624), measured from 53 mm. to 79 mm. long.

Head 4.3 to 4.5 in length of body; depth 3.8 to 4. Eye 3.4 to 3.6 in head; snout 2.8 to 3; interorbital width 2.4.

D. II, 7 or 8; A. II, 6 or 7. Scales 35 to 37.

Among variations it is to be noticed that on some specimens, there is a dark band along the lateral line; on others, a dark spot at the base of caudal; and still others the scales on ventral side has no black margin. Few of our examples have some horny points before and below the eye.

Common.

Culticula Abbott

Culticula Abbott, 1901, Proc U. A. Nat. Mus., XXIII, p. 485.

Culticula emmelas Abbott was originary described on a type and three cotypes from Tien-Tsin. In adding of the following new species to this monotypic genus, the generic characters may be slightly modified as follows:

Body moderately elongate, more or less compressed, abdomen rounded or keeled between ventrals and anal. Dorsal fin short, inserted a little behind ventrals, with 2 spines and 7 rays, the second spine stronger than the first. Anal rather short, inserted below tip of depressed dorsal. Mouth terminal, small and somewhat oblique. Barbels absent. Lateral line complete, curved downward, extending along middle of caudal peduncle. Scales of moderate size. Pharyngeal teeth in one row, 6 or 5-5, not hooked.

Culticula tchangi Shaw, sp. nov.

Type.—No. 4340, Zool. Mus. Fan Mem. Inst. Biol., measured 120 mm. long. Co-type, No. 4341, 112 mm. long, Both were collected by Mr. Chia.

Head 4.8 to 4.9 in length of body; depth 4 to 4.5. Eye 3.5 to 3.7, snont 4.2, interorbital width 2.8 to 3; longest pecoral ray 1.1 ;longest ventral ray 1.3; longest dorsal ray 1.4; longest anal ray 2.3.

D. 11,7; A. 11,9. Scales 58,

Head moderate, eye rather large. Ventrals insereted under dorsal, the latter nearer to the tip of snout than root of caudal. Pectorals slender, not reaching the origin of ventrals. Caudal forked.

Color silvery, top of head and body dark brown.

This species closely resembles *Culticula emmelas* Abbott, but differs from that in having rounded abdomen between ventrals and anal, and more scales on lateral line.

The present species is named after my friend Dr. Tchung-Lin Tchang, in recognition of his valuable studies on the fresh-water fishes of the Yangtse River.

Fusania ensarca Jordan & Starks

Fusania ensarca Jordan & Starks, 1905, Proc. U. S. Nat. Mus., XXVIII, pp. 198-199, fig. 4; Fowler, 1924, Mem. As. Soc. Bengal, VI, p. 513.

This species the writer has not seen. The following lines are taken from Fowler's notes: "Head $3\frac{1}{2}$; depth $3\frac{3}{4}$; D. II, 7; A. III, 7;..... scales 27..... and 3 more in latter; lateral line only as 5 tubes in first 5 scales;..... snout $3^7/_8$ in head.....; eye $3^1/_8$; maxillary 3; interorbital 3. Pale brownish generally. .... One example, 30 mm."

Hypophthalmichthys molitrix (Cuvier & Valenciennes)

Leuciscus molitrix Cuvier & Valenciennes, 1844, Hist. Nat. Poiss.., XVII, p. 360.

Hypophthalmichthys molitrix 1868 Günther, Cat. Fish., VII pp. 298-299; Fowler, 1924, Mem. As. Soc. Bengal, VI, pp. 511-512.

Two specimens (Nos. 3073 & 4324), measured 220 mm. to 255 mm. long.

Head 3.6 in length of body; depth 3.1 to 3.2. Eye 5.5 in head; snout 3.4 to 3.7 ; interorbital width, 2.3.

D. II, 8; A. II, 13. Scales 113 to 117.

Color blackish brown above, pale below.

A common food fish. Like *H. molitrix*, it also admitted to the fish ponds.

Hypophthalmichthys nobilis (Richardson)

Leuciscus nobilis Richardson, 1844, Ichthyol. Voy. Sulph., p. 140, pl. 63, fig. 3.

Hypophthlmichthys nobilis Günther, 1868, Cat. Fish., VII, p. 299; Fowler, 1924, Men. As. Soc. Bengal, VI, p. 512.

Fig. 11. *Culticula tchangi* Shaw

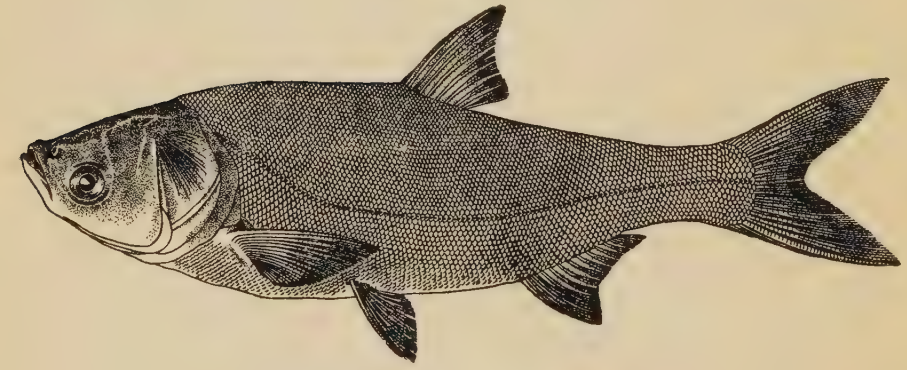

Fig. 12. *Hypophthalmichthys molitrix* (Cuvier & Valenciennes)

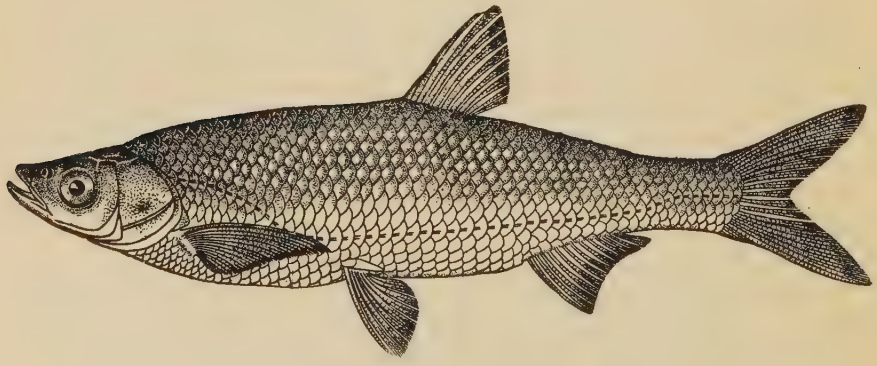

Fig. 13. *Hemiculter leuciscus* (Basilewsky)

Two specimens (Nos. 5143 & 6636), measured 195 mm. and 215 mm. long.

Head 2.7 to 2.9 in length of body; depth 3.1 to 3.3. Eye 5.8 to 6 in head; snout 2.8 to 2.9; interorbital width 2.2 to 2.3.

D. II, 7; A. II, 12 or 14. Scales 98 to 104.

Dorsal side blackish brown, other parts paler.

This is one of our domestic fishes, valued as food. The head of this fish is larger than that of *Hypophthalmichthys molitri* (Cur. & Val.).

Hemiculter leucisculus (Basilewsky)

Culter leucisculus Basilewsky, 1855, Nouv. Mem. Soc. Nat. Mosc., X. p. 238.
Chanodichthys leucisculus Günther, 1868, Cat. Fish., VII, p. 327.
Culticulus kneri Fowler, 1924, Mem. As. Soc. Bengal, VI, p. 515

Eight specimens (Nos. 3061-3063, 4671, 4672, 5154, 5155 & 6621), length varies from 75 mm. to 150 mm.

Head 4.5 in length of body, depth 4.3 to 4.8. Eye 3.3 to 4 in head; snout 3.5 to 4.1; interorbital width 3.2 to 3.6.

D. II, 7 or 8; A. II, 11 to 13. Scales 50 to 53.

Body compressed, abdomen keeled to the vent.

Very Common.

Culter brevicauda Günther

Culter brevicauda Günther, 1868, Cat. Fish., VII, p. 329-330; Fowler & Bean, 1920, Proc. U. S. Nat. Mus., LVIII, pp. 313-314; Fowler, 1924, Mem. As. Soc. Bengal, VI, p. 516.

Six specimens (Nos. 3059-3060, 4667-4668, 5132 & 5136), measured from 82 mm. to 203 mm. long.

Head 4.2 to 4.3 in length of body; depth 4 to 4.5. Eye 3.2 to 4.4 in head; snout 4 to 4.4; interorbital width 4.8.

D. II, 7 or 8; A. II, 25 to 27. Scales varies from 64 to 67.

Common food fish.

Culter erythropterus Basilewsky

Culter erythropterus Basilewsky, 1855, Nouv. Mem. Soc. Nat. Mosc., X, p. 236, pl. VIII, fig. 1.

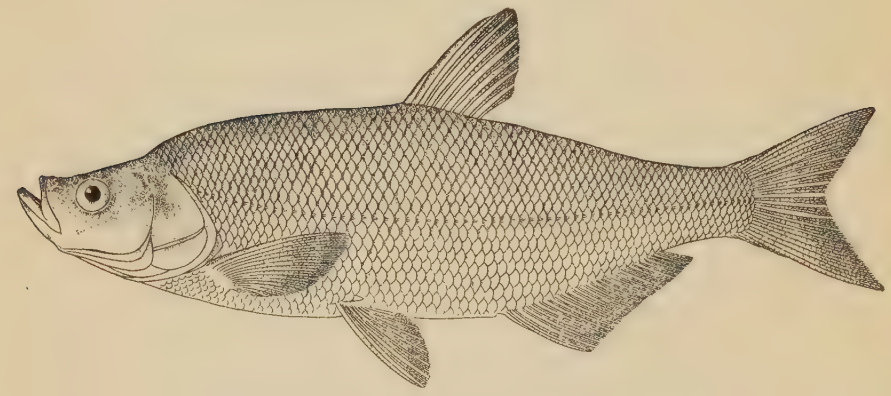

Fig. 14. *Culter brevicauda* Günther

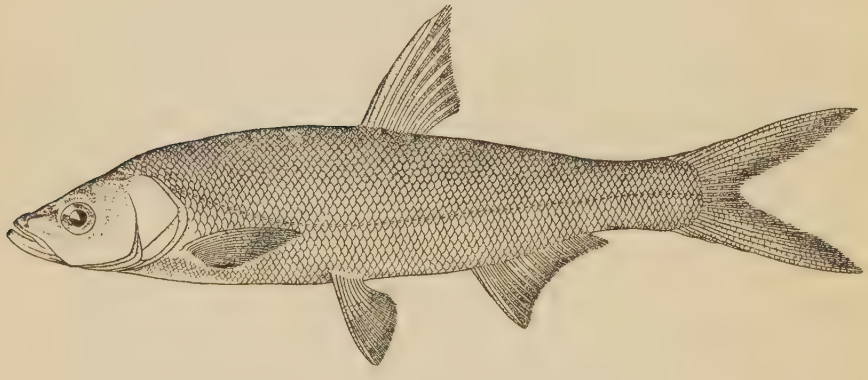

Fig. 15. *Culter kashinensis* Shaw

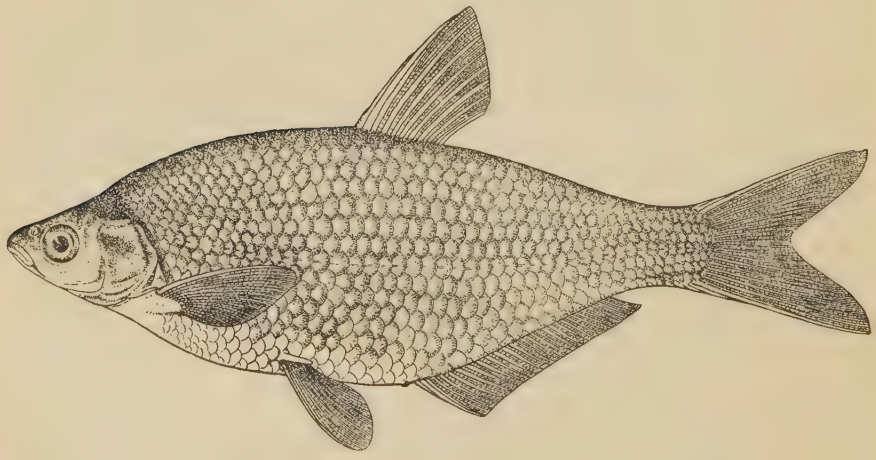

Fig. 16. *Chanodichthys bramula* (Cuvier & Valenciennes)

Two specimens (Nos. 4676 & 5133), measured 185 mm. and 470 mm. respectively.

Head 4.5 to 4.9 in length of body; depth 4.6 to 5.2. Eye 3.7 to 5. 1 in head; snout 3.4 to 3.6; interorbital width 4.7 to 6.

D. II, 8; A. III, 22 or 23 scales 84 or 85.

Culter mongolicus Basilewsky

Culter mongolicus Basilewsky, 1855, Nouv. Mem. Soc. Nat, Mosc., X. p. 237,

Two specimens (Nos. 5130 & 5131), measured 225 mm. and 175 mm. long respectively.

Head 4.4 or 4.5 in length of body; depth 4.4 or 4.6. Eye 3.6 or 3.9 in head; snout 3.5 or 3.6; interorbital width 4.9.

D. II,8; A. III,23 or 24. Scales 80.

Culter kashinensis Shaw

Culter kashinensis Shaw, 1930, Bull. Fan. Mem. Inst. Biol., I, pp. 116-117, fig. 5.

One specimen (No. 4665), measured 295 mm. long.

Head 4.3 in length of body; depth 4.8. Eye 6.6 in head; snout 3.4; interorbital width 3.3.

D. II,7; A. II,21. Scales 75 (72 in the type).

This fish differs from *C. bravicauda* Günther in having less anal rays and more scales on the lateral line, and from *C. pseudobrevicauda* (Nichols & Pope) in having more elevated back and less straght lateral line.

Chanodichthys bramula (Cuvier & Valenciennes)

Leuciscus bramula Cuviver & Valenciennes, 1844, Hist. Nat. Poiss., XVII, p. 357.

Chanodichthys bramula Günther, 1686, Cat. Fish., VII, pp. 326-327; Fowler, 1924, Mem. As. Soc. Bengal, VI, p. 514-515.

Six specimens (Nos. 3050-3052,4315, 5134-5135), measured 172 mm. to 225 mm. long.

Head 4.6 to 5 in length of body; depth 2.4 to 2.8. Eye 3.4 to 3.7 in head; snout 3.8 to 4; interorbital 2.4 to 2.6.

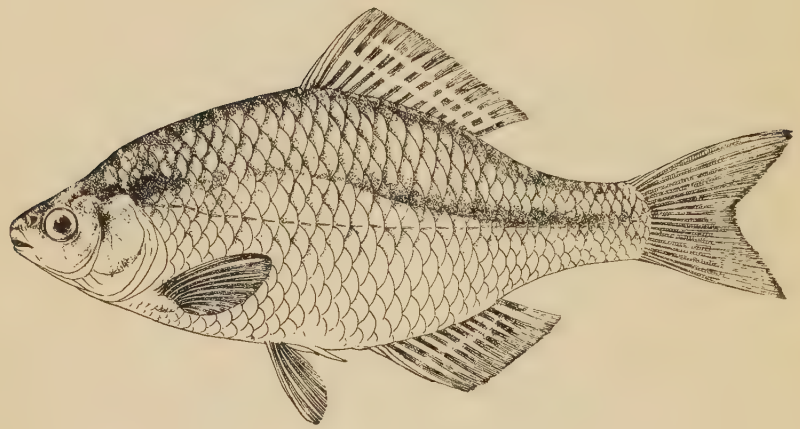

Fig. 17. *Paracheilognathus imberbis* (Günther)

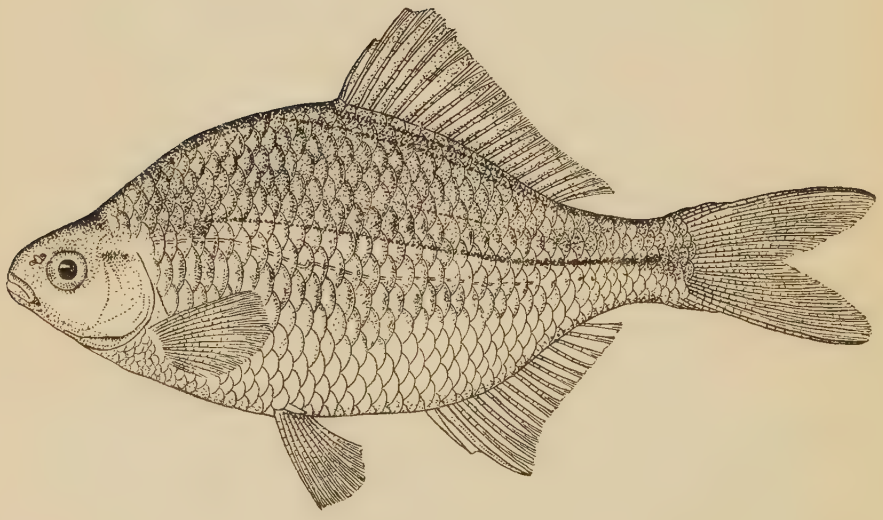

Fig. 18. *Acanthorhodeus taenianalis* Günther

D. II,8; A. II, 27 to 32. Scales varies from 52 to 59.

Color brownish above, and pale below.

Common, used as food.

Paracheilognathus imberbis (Günther)

Achielognathus imberbis Günther, 1868, Cat. Fish., VII, p. 278.

Paracheilognathus imberbis Fowler, 1924, Mem. As. Soc. Bengal, VI, pp. 508-509.

Rhodeus maculatus Fowler, 1910, Proc. Acad. Nat. Sci. Philad, LXII, p, 476, fig. 1.

Three specimens (Nos. 4318, 5176 & 6625), measured from 51 mm. to 63 mm. long.

Head 4. 2 to 4.4 in length of body; depth 2.5. Eye 2.6 to 3 in head; snout 3.3 to 4.3; interorbital width 2.5 to 2.6

D. II, 12 to 13; A. II, 10 to 13. Scales 31 to 34.

Color brownish, a dark spot over the pectoral, and a median streak along side of the body to base of caudal.

Common.

Acanthorhodeus taenianalis Günther,

Acanthorhodeus taenianalis Günther, 1873, Ann. Mag. Nat. Hist., (4), XII, p. 247.

Acanthorhodeus asmussi Fowler & Bean, 1920, Proc. U.S. Nat. Mus., LVIII, p. 310.; Fowler, 1924, Mem. As. Soc. Bengal, VI, pp. 509-510

Eight specimens (Nos. 3041-3043, 4316-4317, 5174-5175,-6626 & 6627), measured from 75 mm. to 100 mm. long.

Head 4.1 to 4.2 in length of body; depth 2. Eye 2.9 to 3 in head; snout 4; interorbital width 2.5 to 2.7.

D. II, 17 or 18; A. II, 12 to 13. Scales 37 or 38.

A dark spot above pectoral fin, followed by a black streak on side of caudal peduncle.

Common.

Hemibarbus soochowensis Shaw, sp. nov.

Type: No. 4307, Zoll Mus. Fan Mem. Inst. Biol., a specimen measured 130 mm. long from point of snout to base of caudal, collected by T. Y. Chia.

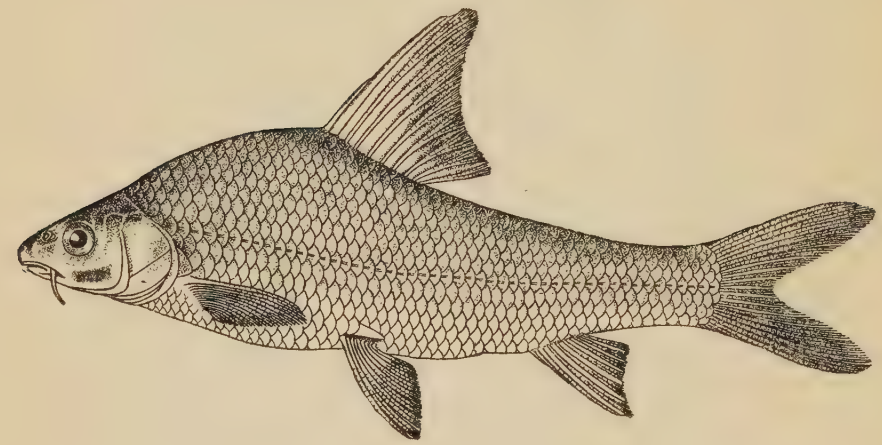

Fig. 19. *Hemibarbus soochowensis* Shaw

Fig. 20. *Hemibarbus maculatus* Bleeker

Fig. 21. *Pseudogobia rivularis* (Basilewsky)

Head 4.4 in length of body; depth 3. 2. Eye 4.8 in head; snout 3. 2; interorbital width 2. 9; longest pectoral ray 1. 1; longest ventral ray 1. 1; longest dorsal ray 0.9; longest anal ray 1.7; caudal lobe 8; width of body 1. 8.

D. II, 8; A. II, 6. Scales 49.

Body somewhat elongated, back more or less arched. Snout blunt, mouth terminal, two barbles on each corner of the mouth, their length are little shorter than the diameter of the eye. Dorsal in front half of the body, with two smooth spines, the second of which stronger. Pectorals not reaching ventrals. Ventrals behind the dorsal, nearly reaching the anal opening. Anal some distance away from the anal opening, not reaching caudal. Caudal forked.

Color brownish above, silvery from lateral line region to venral side. Back of head, oringin of dorsal, and back of the caudal punduncle somewhat darker. Two darker markings on side of the caudal peduncle. Dorsal fin marked with a dark spot, its spines are darker on the anterior side.

The pharyngeal teeth are arranged in a single series.

Hemibarbus soochowensis is somewhat like *Hemibarbus maculatus* Bleeker, differs chiefly by its smaller head, deeper body, and color pattern.

Hemibarbus maculatus Bleeker

Hemibarbus maculatus Bleeker, 1871, Verh. Akad. Wet. Amst., Nat., XII, p. 19, pl. IV, fig. 3.

Hemibarbus joiteni Jordan & Starks, 1904, Smith. Misc. Coll., XLV, pp. 241-242, pl. LXIV.

Seven specimens (Nos. 3037-3039, 4673-4675, 5139 & 6617), measured 140 mm. to 274 mm. long.

Head 3.7 to 4 in length of body; depth 4.2 to 4.6. Eye 4. to 5 in head; snout 2.5 to 3.2; interorbital width 3.2 to 3.7.

D. II, 8; A. II, 7. Scales 48 to 49.

Color grayish above, yellowish below. Side of body with a series of large spots. Dorsal portion of the body, dorsal and caudal fins irregulary spotted.

Common.

Pseudogobio rivularis (Basilewsky)

Gobio rivularis Basilewsky, 1855, N. Mem. Soc. Nat. Mosc., X, p. 231.
Pseudogobio sinensis Günther, 1868, Cat. Fish., VII, p. 175; Fowler & Bean, 1920, Proc. U.S. Nat. Mus. LVIII, pp. 310-311.
Pseudogobio rivularis Fowler, 1924 Mem. As. Soc. Bengal, VI, p. 511.

Three specimens (Nos. 4308, 4309 & 5173), measured 63 mm. to 72 mm. long.

Head 3.6 to 3.7 in length of body; depth 4.2 to 4.5. Eye 3.5 to 3.8 in head; snout 2.3 to 2.4; interorbital width 4.4 to 4.8.

D. II, 8; A. II, 6. Scales 35.

Mouth inferior, with a pair of small barbels at corner. Pectoral spine strong, serreted inside.

Color brownish generally, side of body with 7 dark blotches. Dorsal with oblique lines. Caudal with several oblique lines and a dark spot at the base of caudal.

Pseudogobio sinensis (Kner) seems to the young of *Pseudogobio rivularis* (Basilewsky). Therefor *P. sinensis* is a synonym of the present species.

Sarcocheilichthys nigripinnis (Günther)

Gobio nigripinnis Günther, 1873, Ann. Mag. Nat. Hist., (4) XII, p. 246.
Exoglossops geei Fowler & Bean, 1920, Proc. U.S. Nat. Mus., LVIII, pp. 311-312.
Georgichthys scaphignathus Fowler, 1924, Mem. As. Soc. Bengal, VI, pp. 513. 514.

Twelve specimens (Nos. 3067-3068, 4319-4323, 5156-5159, & 6629), measured 70 mm. to 108 mm. long.

Head 3.7 to 4.5 in length of body; depth 3.2 to 3.5. Eye 3.3 to 3.7 in head; snout 2.7 to 3.3; interorbital width 2.5 to 3.

D. III, 7 or 8; A. III, 6 or 7. Scales vary from 36 to 41.

Four broad cross-bands which are brownish black in coloration on each side of the body. Fins black. The color pattern shows some variation among different individuals.

This fish is closely related to *Sarcocheilichthys sinensis* Bleeker, differs from it only by the absence of a pair of small barbels and few minor points.

Less common.

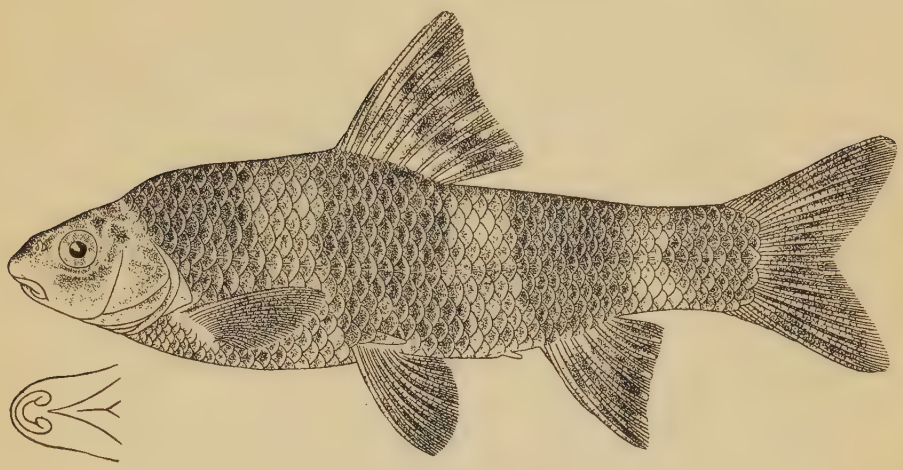

Fig. 22. *Sarcocheilichthys nigripinnis* (Günther)

Fig. 23. *Misgurnus anguillicaudatus* (Cantor)

Fig. 24. *Parasilurus asotus* (Linnæus)

Family **COBITIDAE**

Misgurnus anguillicaudatus (Cantor)

Cobitis anguillicaudatus Cantor, 1842, Ann. Mag. Nat. Hist IX, p. 485.

Misgurnus anguillicaudatus Günther, 1868, Cat. Fish., VII, pp. 345-346; Fowler & Bean, 1920, Proc. U. S. Nat. Mus., LVIII, 309-310; Fowler, 1924, Mem. As. Soc. Bengal, VI, p. 508.

Five specimens (Nos. 3064-3066, 5184 & 6618), 85 mm. to 190 mm. long.

Head 7 in length of body, depth 6.3. Eye 7 in head; snout 2,9. interorbital width 4.2. Measurements taken from specimen No. 3066.

D. 9 or 10; A. 7 or 8. Scales very small, 95 or less than that.

Color brownish black, with a small black spot at base of caudal. In some specimens, the body and fins are irregulary dotted.

Common.

Family **SILURIDAE**

A. Body elongate, dorsal without a spine, adipose fin absent, caudal not forked..... *Parasilurus*

AA. Body of moderate length, dorsal with a spine, adipose fin present, caudal forked..... *Pseudobargrus*

Parasilurus asotus (Linnæus)

Silurus asotus Linnæus, 1758, Syst. Nat., 10th ed., p. 304; Günther, 1864, Cat. Fish., V, pp. 33-34.

Parasilurus asotus Fowler & Bean, 1920, Proc. U. S. Nat. Mus., LVIII, pp. 308-309; Fowler, 1924. Mem. As. Soc. Bengal, VI, p. 507.

Five specimens (Nos. 3056-3058, 5144 & 5145), 170 mm. to 335 mm. long.

Head 4.5 to 5 in length of body; depth 6.3 to 6.4. Eye 8.6 to 9.2 in head; snout 2.9 to 3; interorbital width 2.1.

D. 5 or 6; A. 76 to 82. Scales absent.

Color, dark brown above, pale below.

A common food fish.

Pseudobargrus fulvidraco (Richardson)

Pimelodus (?) *fulvi-draco* Richardson, 1846, Ichth. Chin. p. 286.

Pseudobargrus fulvi-draco Günther, 1864, Cat. Fish., V, pp. 85-86.

Fluvidraco fulvidraco Fowler & Bean, 1920, Proc. U. S. Nat. Mus., LVIII, p. 309; Fowler, 1924, Mem. As. Soc. Bengal, VI, p. 507.

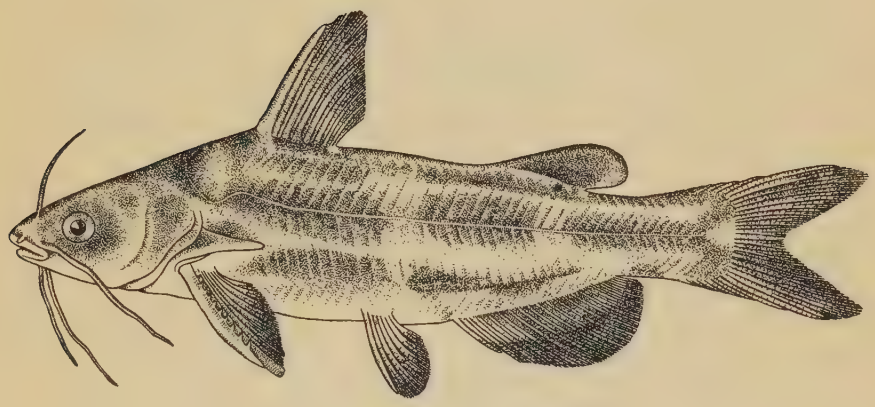

Fig. 25. *Pseudobargrus fulvidraco* (Richardson)

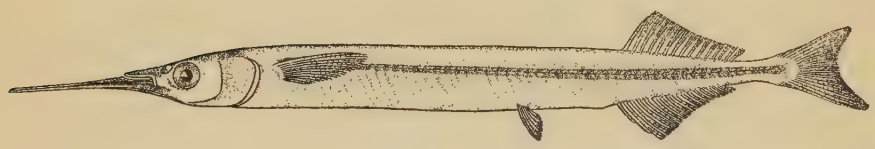

Fig. 26. *Hyporhamphus sinensis* (Günther)

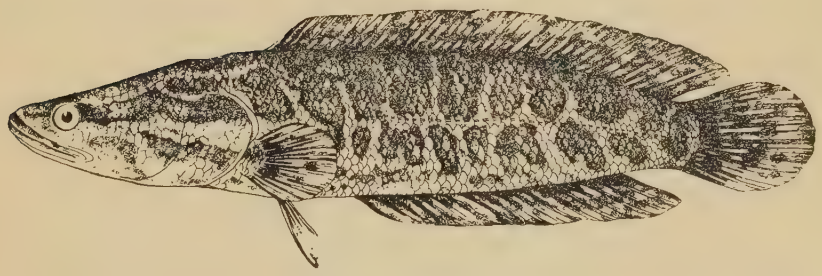

Fig. 27. *Ophicephalus argus* Cantor

Nine specimens (Nos. 3046, 3044a, 3044b, 3045, 3046, 5162, 5163, 6631-6633), 82 mm. to 160 mm. long.

Head 4 in length of body; depth 4.4. Eye 5.7 in head; snout 3.1; interorbital width 2.1. Description based on the largest specimen.

D. I. 7 or 8; A. 20 or 21. Scales absent.

Color, dark brown above, pale below.

In addtion to the above specimens, we have two more young fishes from Soochow. One messured 73 mm. long, and the other 63 mm. only. They are lighter in coloration, being somewhat yellowish. As compared with the larger ones, the young fish has less deep body, shorter head, larger eye, and narrower interorbital space.

Closely related with *Pseudobargrus vachellii* (Richardson), differs from it in having a broader occipital process.

A common food fish.

Family **HEMIRAMPHIDAE**

Hyporhamphus sinensis (Günther)

Hemirhamphus sinensis Günther, 1866, Cat. Fish., VI, pp. 265-266.

Hyporhamphus sinensis Fowler & Bean, 1920, Proc. U. S. Nat. Mus., LVIII, p. 314.

Eleven specimens (Nos. 3069-3071, 4333-4335, 5167-5171), measured 93 mm. to 124 mm. long.

Head 5 in length of body; depth 15; lower jaw beyond the extremity of the upper jaw, 4. Eye, 4.8 in head; snout 2.4; interorbital width 4.8. Measurements taken from specimen No. 4335.

D. 15; A. 14 or 15. Scales deciduous (Günther gives 55).

Color brownish, with a silvery band on sides of the body.

Less common.

Family **OPHICEPHALIDÆ**

A. Vemtral fins present.....*Ophicephalus* (p. 191)

AA. Ventral fins absent.....*Channa* (p. 191)

Ophicephalus argus Cantor

Ophicephalus argus Cantor, 1842, Ann. Mag. Nat. Hist., IX, p. 484. Günther, 1861, Cat. Fish., III, p. 480.

Ophicephalus pekinensis Fowler & Bean, 1920, Proc. U. S. Nat. Mus., LVIII, pp. 315-316. Fowler, 1924, Mem. As. Soc. Bengal, VI, p. 517.

Five specimens (Nos. 3032, 3033, 5137, 5138, & 6615), measured 88 mm. to 237 mm. long.

Head 3.1 in length of body; depth 5.2. Eye 8.7 in head; snout 5.8; interorbital 5.3. Measurements taken on specimen No. 5137.

D. 49 to 51; A. 34. Scales 62-64.

Color black above, pale below. Numerous black bars on side of the body.

Besides the above mentioned examples, we have three more young specimens (Nos. 4330-32) measured 54 mm. to 57 mm. long. The young fish has a longer head, lower body, and larger eye. The color markings are not clearly visible. The rays in the dorsal and anal seem to be fewer than that of the larger specimens.

It is a food fish, but not admitted to the fish-ponds. Common.

Channa ocellata Peters

Channa ocellata Peters, 1864. Monatber. Acad. Wiss. Berl., p. 384.

Channa fasciata Fowler, 1924, Mem. As. Soc. Bengal, VI, p. 517.

Two specimens (Nos. 4336 & 6614), measured 95 mm. and 250 mm. respectfully.

Head 3.7 in length of body; depth 6. Eye 5.3 in head; snout 4.4; interorbital width 3.8. Measurements taken from specimen No. 4336.

D. 45 or 47; A. 29 or 31. Scales 57 or 58.

Color dark brown above, paler below. Side of body with about ten cross-bars, those at the posterior portion of the body V-shaped. An oval black ocellus at base of caudal. Our larger specimen is much darker in coloration, it losts all its characteristic marks.

Family **OSPHRONEMIDAE**

Macropodus opercularis (Linnæus)

Labrus opercularis Linnæus, 1788, Amoen. Acad., IV, p. 428.

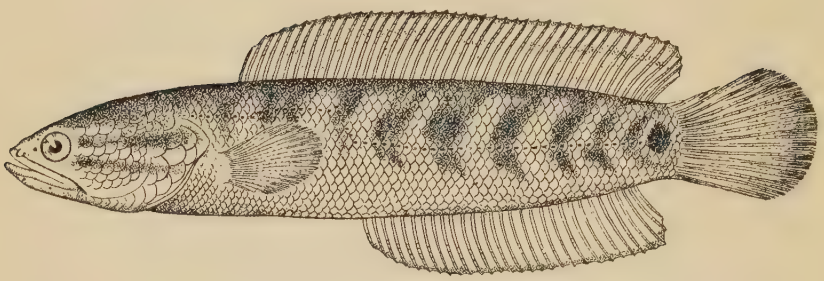

Fig. 28. *Canna ocellata* Peters

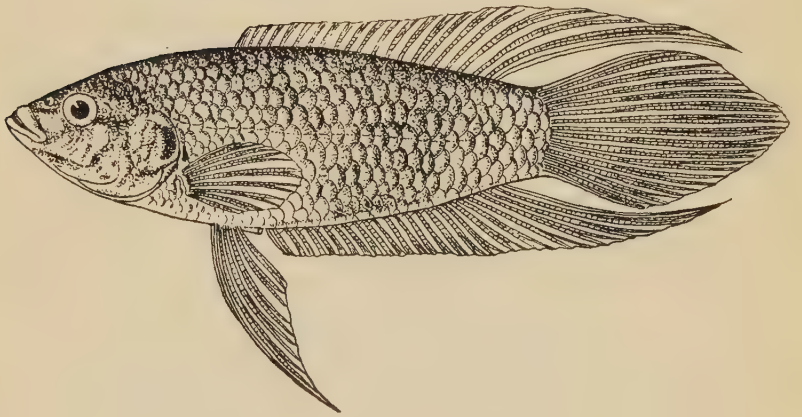

Fig. 29. *Macropodus opercularis* (Linnæus)

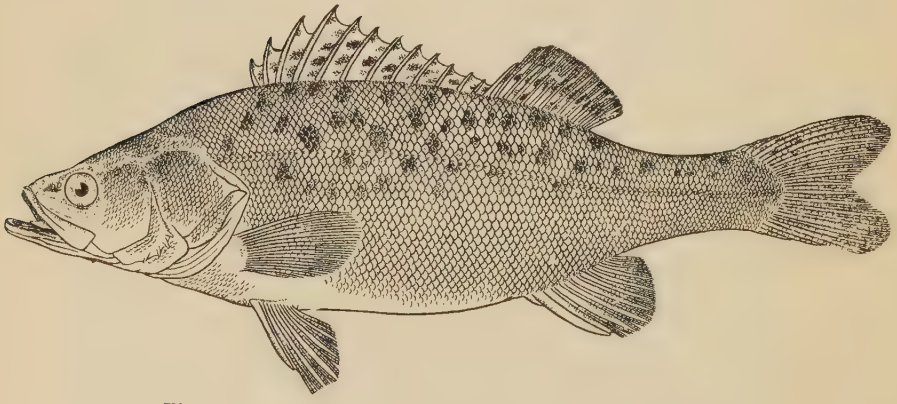

Fig. 30. *Lateolatrax japonicus* (Cuvier & Valenciennes)

Polyacanthus opercularis Günther, 1861. Cat. Fish , III, p. 379. Fowler & Bean., 1920, Proc. U. S. Nat. Mus., LVIII, pp. 316-317. Fowler, 1924, Mem. As. Soc. Bengal, VI, pp. 517-518.

Six specimens (Nos. 4337-4339, 3079 & 3081), measured 38 mm. to 47 mm. long.

Head 3 in length of body, depth 2.7. Eye 4.2 in head; snout 3.9; interorbital 3.5. Measurements based on specimen No. 4337.

D. XV to XVII, 6; A. XIX to XX, 9 to 10. Scales 27.

Color blackish, a black spot on the opercle.

Family **SERRANIDAE**

A. Scales larger, caudal emarginate, origin of ventrals behind base of pectorals.....*Lateolabrax* (p. 193)

AA. Scales smaller, caudal round, origin of ventrals near to the base of pectorals..... *Siniperca* (p. 193)

Lateolabrax japonicus (Cuvier & Valenciennes)

Labrax japonicus Cuvier & Vanlenciennes, 1828 Hist. Nat. Poiss., II, p. 85.

Percalabrax japonicus Günther, 1859, Cat. Fish., I, p. 71.

Lateolabrax japonicus Boulenger, 1895, Cat. Fish., 2nd ed., I, p. 123-124.

One specimen (No. 4677), measured 470 mm. long.

Head 4.1 in length of body; depth 5. Eye 5.8 in head; snout 4; interorbital width 5.6.

D. XI-II 13; A. III, 7. Scales 89.

Color silvery. dorsal side somewhat grayish. Dorsal fin, back, and side of body with numerous black spots.

Food fish, rare in Soochow.

Siniperca chuatsi (Basilewsky)

Perca chua-tsi Basilewsky, 1855, Nouv. Mem. Soc. Nat. Mosc., X, p. 218, pl. I, fig. 1.

Siniperca chuatsi Boulenger, 1895, Cat. Fish., 2nd ed., I, pp. 136-137; Garman, 1912, Mem. Mus. Comp. Zool., XL, p. 112; Fowler & Bean, 1920, Proc. U. S. Nat. Mus., LVIII, pp. 314-315; Fowler, 1924, Mem As. Soc. Bengal, VI, pp. 516-517.

Siniperca knerii Garman, 1912, Mem. Mus. Comp. Zool., XL, pp. 112-113.

Eight specimens (Nos. 3074-3076, 5150-5153, & 6628), measured 88 mm. to 144 mm. long.

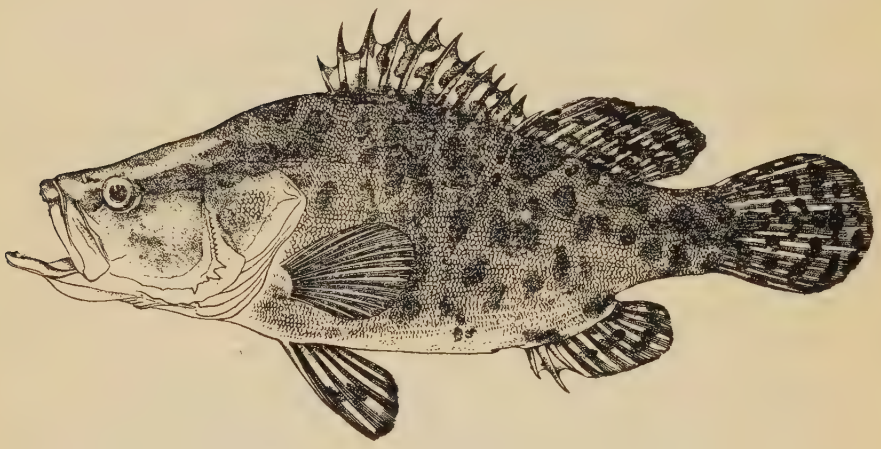

Fig. 31. *Siniperca chuatsi* (Basilewsky)

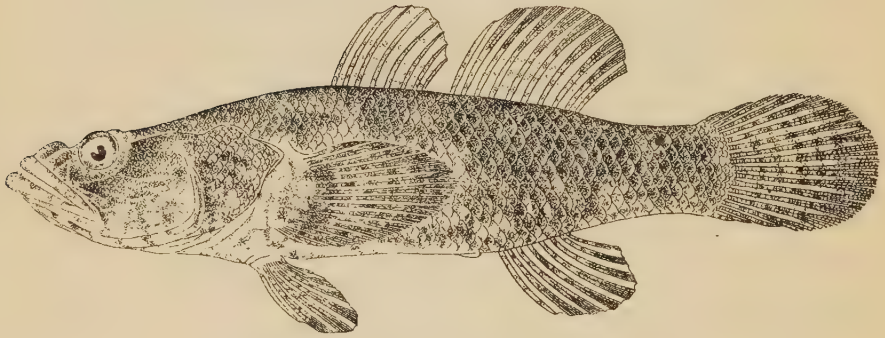

Fig. 32. *Eleotris potamophila* Günther

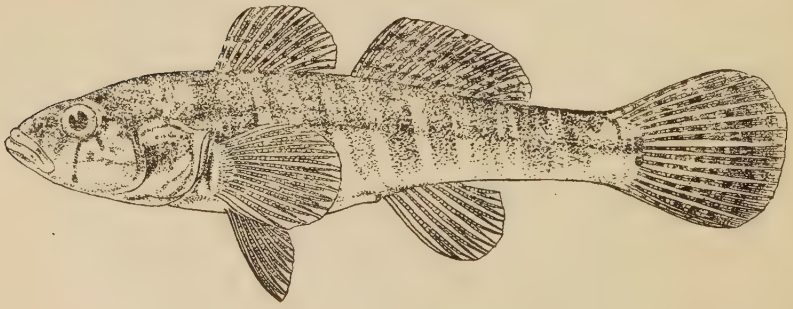

Fig. 33. *Eleotris swinhonis* Günther

Head 2.6 to 2. 7 in length of body; depth 2.8 to 3.1. Eye 4 to 5.2 in head; snout 3.6 to 4; interorbital width 7.4 to 7.8.

D. XII or XIII—12 to 15; A. III, 9 to 11. Scales very small, 116 or less.

Color browish, with irregular dark brown spots. A dark brwon streak on each side of the head which passing through the eye.

Common, one of the best fishes for the table.

Garman (1912) separates *Siniperca chautsi* into two groups:—one, the species proper, characterized by that the eye is about one sixth of the length of the head, or one and one half times the interorbital width, and on which the maxillary reaches beyond a vertical from the hind edge of the eye; and another, *Siniperca knerii*, in which the eye is nearly one fourth of the length of the head, or about twice the interorbital width and in which there is a considerable distance behind the end of the maxillary in front of a vertical at the hind border of the orbit. Young fish has a much larger eye. In fact, *Siniperca knerii* Garman is only a young of *Siniperca chuatsi*, and therefore does not stands for a valid species.

Family **GOBIIDAE**

Eleotris potamophila Günther

Eleotris potamophila Günther, 1861, Cat. Fish., III, pp. 557-558.
Butis butis Fowler & Bean, 1920, Proc. U. S. Nat. Mus., LVIII. p. 320.
Eleotris obscura Fowler, 1924, Mem. As. Soc. Bengal, VI, pp. 518-519.

Eleven specimens (Nos. 3077-3078, 4327-4329, 4669-4670, 5160-5161, 6634-6635) measured from 49 mm. to 145 mm. long.

Head 3.2 in length of body; depth 5.3 (?). Eye 6.2 in head; snout 3.5; interorbital width 3.7. Description based on the largest specimen.

D. VII. 9 or 10; A. I,8. Scales from 35 to 37 (Günther gave 42).

Color bownish black above, pale below. side of body irregulary marked. Some of the preservd specimens are more or less reddish.

According to Günther, this fish is very closely related to *Eleotris obscura* Temminck & Schlegel, but differs from the later by the pair of brown spots at the root of the pectoral fin,

Eleotris swinhonis Günther

Eleotris swinhonis Günther, 1873, Ann. Mag. Nat. Hist., (4) XII, p. 242.

Micropercops dabryi Fowler & Bean, 1920, Proc. U. S. Nat. Mus., LVIII, pp. 319-320.

? *Gobius caninus* Fowler, 1924, Mem. As. Soc. Bengal, VI, p. 519.

Two specimens (Nos. 3085, & 3086), measured 35 mm. and 30 mm. long.

Head 3.3 or 3.5 in length of body; depth 3.8 or 4.4. Eye 2.6 or 3.1 in head; snout 3.7 or 4; interorbital width 3.7 or 4.3.

D. IX—12 or 13; A. 8. Scales about 40.

The fish is rather small. Its scales are not clearly visible. Dorsal side somewhat brownish, ventral side paler. There are several crossbars along the side of the body.

Family **TETRAODONTIDAE**

Tetraodon[1] **ocellatus** Linnæus

Tetraodon ocellatus, Linnaeus, 1758, Syst. Nat., 10th ed., p. 333.(After Osbeck). Günther, 1870, Cat. Fish., VIII, p. 279,

Spheroides ocellatus Fowler & Bean, 1920, Proc. U. S. Nat. Mus., LVIII, p. 317. Fowler, 1924, Mem. As. Soc. Bengal, VI, p.518.

Three specimens (Nos. 4325-4326, 6630) measured 129 mm. to 180 mm. long.

Head 3.2 to 3.4 in length of body; depth 3.5. Eye 8.5 to 9 in head; snout 2.0 to 2.1; interorbital width 1.8 to 1.9

D. IV, or V, 13; A. III, 12 or 13.

Back covered with minute spines from interorbital space nearly to dorsal fin; abdomen covered with similar spines; sides naked.

Color gray above, white below. Head more or less black. A black yellowish-edged band across the back, ending in a yellowish-edged spot. A black spot on base of dorsal, which is also yellowish edged.

1. Often written as *Tetrodon*.

Fig. 34. *Tetraodon ocellatus* Linnæus

A COMPARATIVE LIST OF THE FISHES OF SOOCHOW AND NANKING

The following list gives a summary of the fishes of Soochow. They are compared with the fishes found in Nanking. For both Soochow and Nanking are situated in the Lower Yangtse Valley. Soochow is forty miles south of the great river, it is linked with the Yang-tse by the Grand Canal and many small rivers. Nanking is on the Yangtse river. A comparaison of their Ichthyological fauna may prove useful to the students of Zoo-geography. Some of the fishes are marked by an asterisk (*), their occurrence in the waters of Soochow and Nanking are very doubtful.

References have been made on the following articles, quotation marks being not used under each species.

Evermann, B. W., and Shaw, T. H.

1927 Fishes from Eastern China, with Descriptions of New Species. Proc. Calif. Acad. Sci., 4th Ser., XVI, pp. 97-122.

Fowler, H. W.

1924 Zoological Results of a Tour in the Far East: Fishes of the Tai-Hu, Kiangsu Province, China. Mem. As. Soc. Bengal, VI, pp. 503-519.

Fowler, H. W., and Bean, B. A.

1920 A Small Collection of Fishes from Soochow, China, with Descriptions of Two New Species. Proc. U. S. Nat. Mus., LVIII, pp. 307-321.

Tchang, T. L.

1928 A Review of of the Fishes of Nanking. Cont. Biol, Lab. Sci. Soc., IV, No. 4 (pp. 1-42).

1929a A List of Fishes Recorded from the Yangtse River. Science (in Chinese), XIV, pp. 398-407.

1929b Description de Cyprinidés nouveaux de Chine, Bulletin du Muséum d'histoire naturelle, Paris, 2 Ser. Tome I, No. 4, pp. 242-243.

The order of arrangement of families in this list follows Dr. David Starr Jordan in his "A Classification of Fishes", 1923.

SOOCHOW	NANKING
Family RAJIDAE	
Raja Linnæus	
	* *R. batis* Linnæus
Family ACIPENSERIDAE	
Acipenser Linnæus	
	1. *A. sinensis* Gray
Family POLYODONTIDAE	
Psephurus Günther	
	2. *P. gladius* (Martens)
Family ENGRAULIDAE	
Coilia Gray	
1. *C. nasus* Temminck & Schlegel	3. *C. nasus* Temminch & Schlegel
	4. *C. rendahi* Jordan & Seale
2. *C. ectenes* Jordan & Seale	5. *C. ectenes* Jordan & Seale
Family SALANGIDAE	
Salanx Cuvier	
3. *S. cuvieri* Cuvier & Valenciennes	6. *S. cuvieri* Cuvier & Valenciennes
4. *S. sinensis* (Osbeck)	
Family MONOPTERIDAE	
Fluta Bloch & Schneider	
5. *F. alba* (Zuiew)	7. *Monopterus javanensis* Lacépède = *F. alba* (Zuiew)

SOOCHOW	NANKING
Family MASTACEMBELIDAE	
Mastacembelus Scopoli	
6. *M. sinensis* (Bleeker)	8. *M. sinensis* (Bleeker)
Family ANGUILLIDAE	
Anguilla Shaw	
7. *A. japonica* Temminck & Schlegel	9. *A. japonica* Temminck & Schlegel
Family CATOSTOMIDAE	
Mynocyprinus Gill	
	10. *M. asiaticus nankinensis* Tchang
Family CYPRINIDAE	
Cyprinus Linnæus	
8. *C. carpio* Linnæus	11. *C. carpio* Linnæus
Carassius Nilson	
9. *C. auratus* (Linnæus)	12. *C. auratus* (Linnæus)
Barbus Cuvier	
10. *B. schlegeli* (Günther)	
Myloleuciscus Garman	
11. *M. aethiops* (Basilewsky)	13. *M. aethiops* (Basilewsky)
Ctenopharyngodon Steindachner	
12. *C. idella* (Cuvier & Valenciennes)	
Squaliobarbus Günther	
13. *S. curriculus* (Richardson)	14. *S. curriculus* (Richardson)
Ochetobius Günther	
	15. *O. elongatus* (Kner)
Scombrocypris Günther	
	16. *S. styani* Güuther
Pseudorasbora Bleeker	
14. *P. parva* (Temminck & Schlegel)	17. *P. parva* (Temminck & Schlegel)
Luciobrama Bleeker	
	18. *L. typus* Bleeker
Xenocypris Günther	
	19. *X. argentea* Günther
	20. *X. macrolepis* Bleeker

SOOCHOW	NANKING
Culticula Abbott	
15. *C. tchangi* Shaw	
Fusania Jordan & Starks	
16. *F. ensarca* (Jordan & Starks)	
Hypophthalmichthys Bleeker	
17. *H. molitrix* (Cuvier & Valenciennes)	21. *H. molitrix* (Cuvier & Valenciennes)
18. *H. nobilis* (Richardson.)	22. *H. nobilis* (Richardson)
Hemiculter Bleeker	
19. *H. leucisculus* (Basilewsky)	23. *H. leucisculus* (Besilewsky)
Culter Basilewsky	
20. *C. brevicauda* Günther	24. *C. brevicauda* Günther
21. *C. erythropterus* Basilewsky	25. *C. erythropterus* Basilewsky
22. *C. mongolicus* Basilewsky	
	26. *C. recurviceps* (Richardson)
* *C. hypselonotus* Bleeker	
23. *C. kashinensis* Shaw	
Chanodichthys Bleeker	
	27. *C. mongolicus* (Basilewsky)
24. *C. bramula* (Cuvier & Valenciennes)	
	28. *C. pekinensis* (Basilewsky)
Pseudoperilampus Bleeker	
	29. *P. ocellatus* Kner
Paracheilognathus Bleeker	
25. *P. imberbis* (Günther)	
Acanthorhodeus Bleeker	
26. *A. taenianalis* Günther	30. *A. taenianalis* Günther
Hemibarbus Bleeker	
	31. *H. barbus* (Temminck & Schlegel)
27. *H. soochowensis* Shaw	
28. *H. maculatus* Bleeker	
	32. *H. labeo* (Pallas)
Coreius Jordan & Starks	
	33. *C. styani* (Günther)
	34. *C. rathbuni* (Jordan & Seale)
Pseudogobio Bleeker	
29. *P. rivularis* (Basilewsky)	35. *P. rivularis* (Basilewsky)
	36. *P. chaoi* Evermann & Shaw

SOOCHOW	NANKING
	Saurogobio Bleeker
	37. *S. dabryi* Bleeker
	38. *S. dumerili* Bleeker
	Sarcocheilichthys Bleeker
30. *S. nigripinnis* (Günther)	39. *S.* (*Gobio*) *nigripinnis* (Günther)
	40. *S. sinensis* Bleeker
	41. *S. variegatus* (Temminck & Schlegel)
	Family COBITIDAE
	Cobitis Linnæus
	42. *C. taenia* Linnæus
	Botia Gray
	43. *B. rubrilabris* (Dabry de Th.)
	Misgurnus Lacépède
31. *M. anguillicaudatus* (Cantor)	44. *C. anguillicaudatus* (Cantor)
	Family SILURIDAE (BAGRIDAE, CLARIIDAE)
	Parasilurus Bleeker
32. *P. asotus* (Linnæus)	45. *P. asotus* (Linnæus)
	Pseudobagrus Bleeker
	46. *P. eupogon* Boulenger
33. *P. fulvidraco* (Richardson)	47. *P. fulvidarco* (Richardson)
	Leiocassis Bleeker
**L. longirostris* Günther	48. *L. longirostris* Günther
	Hemibargrus Bleeker
	49. *H. macropterus* Bleeker
	Pseudarius Bleeker
	50. *P. falcarius* (Richardson)
	Claris Scopoli
	51. *C. fuscus* (Lacépède)
	Family HEMIRAMPHIDAE
	Hyporhamphus Gill
34. *H. sinensis* (Günther)	52. *H. sajori* (Temminck & Schlegel) =*H. sinensis* (Günther)
	Family SOLEIDAE
	Cynoglossus Hamilton-Buchanan
**C. abbreviatus* (Gray)	53. *C. abbreviatus* (Gray)

SOOCHOW	NANKING
Family OPHICEPALIDAE	
Ophicephalus Bloch	
35. *O. argus* Cantor	54. *O. argus* Cantor
Channa Scopoli	
36. *C. ocellata* Peters	55. *C. formosona* Jordan & Evermann =*C. ocellata* Peters
Family OSPHRONEMIDAE	
Macropodus Lacépède	
37. *M. opercularis* (Linnæus)	56. *M. opercularis* (Linnæus)
Family PAMPIDAE	
Pampus Bonapart	
	* *P. lighti* Evermann & Shaw
Family SERRANIDAE	
Lateolabrax Bleeker	
38. *L. japonicus* (Cuvier & Valenciennes)	57. *L. japonicus* (Cuvier & Valenciennes)
Siniperca Gill	
39. *S. chuatsi* (Basilewsky)	58. *S. chuatsi* (Basilewsky)
Family LUTIANIDAE	
Lutianus Bloch	
	* *L. hudsoni* Evermann & Shaw
Family HAEMULIDAE	
Hapalogenys Richardson	
	* *H. mucronatus* (Evdoux & Gronow)
Family SCIAENIDAE	
Collichthys Günther	
* *C. lucidus* (Richardson)	
Family SCORPAENIDAE	
Minous Cuvier & Valenciennes	
* *M. monodactylus* (Schneider)	
Family COTTIDAE	
Trachidermis Heckel	
* *T. fasciatus* Heckel	

SOOCHOW	NANKING
Family CEBIDICHTHYIDAE	
Zoarchias Jordan & Snyder	
	* *Z. glaber* Tanaka
Family GOBIIDAE	
Eleotris Gronow	
40. *E. potamophila* Günther	59. *E. potamephila* Günther
41. *E. swinhonis* Günther	60. *E. swinhonis* Günther
Gobius Linnæus	
	61. *G. giuris* Hamilton—Buchanan
Family TETRAODONTIDAE	
Tetraodon Linnæus	
42. *T. ocellatus* Osbeck	62. *T. ocellatus* Osbeck
	63. *T. vermicularis* Temminck & Schlegel

蘇州之魚類

壽振黃

靜生生物調查所於過去之二年中，蒙蘇州中學生物學主任教員吳子修先生，代爲採集蘇州魚類數次，共得標本一百十三號，由蘇州中學寄贈本所。後又蒙生物研究所賈泰寅王以康二先生，在蘇州代爲採集魚類各一次，賈泰寅得標本五十一號，王以康得標本二十二號，均由生物研究所寄贈本所。 余對於吳賈王三先生， 蘇州中學及生物研究所二學術機關，謹表謝忱。

蘇州魚類，據蘇州府誌（光緒七年本）第二十卷所載，共二十九種。除海產者不計外，可稱爲淡水魚者，爲數不及二十。本篇所載，共魚四十二種分隸十四科。蘇州地濱太湖，河流交錯，所產魚類，當非本篇所能盡。繼續採集，實有望於熱心科學之士！

刀魚亦稱鱭魚，有二種，一種曰日本刀魚 (*Coilia nasus*)，一種曰上海刀魚 (*Coilia ectenes*)，秋天甚多。據吳君子修云：蘇州市上，亦有出售，專供飼貓之用。

銀魚亦有二種，一種曰居禮銀魚 (*Salanx cuvieri*)，一種曰中國銀魚(*Salanx chinensis*)。 春夏之交最多，供食用。

黃鱔 (*Fluta alba*) 多產田間，亦棲於河湖及池沿中，春夏之交最多，供食用。

刺鰍亦稱鋸齒鰻 (*Mastacembelus sinensis*)，俗稱刀不利，不多。據吳君子修言：蘇州市上，亦有出售，作貓之飼料。

鰻 (*Anguilla japonica*) 供食用，春末夏初最多。

至於鯉科 (*Cyprinidae*)，種類甚多，除形體較小者外，均可供食用。且有蓄諸池沼，成爲家魚者。

鯉魚 (*Cyprinus carpio*)

鯽魚 (*Carassius auratus*)。

擬棍子魚 (*Barbus schlegel*)。

草魚 (*Myloleuciscus aethiops*)。

青魚 (*Ctenopharyngodon idella*)。

鱒魚 (*Squaliobarbus curriculus*)。

麥穗魚 (*Pseudorasbora parva*) 俗稱渾籠郎。

張氏白魚 (*Culticula tchangi*), 新種。

釜山魚 (*Fusania ensarca*)。

鱮魚 (*Hypophthalmichthys molitrix*) 亦稱白鱮。

鰱魚 (*Hypophthalmichthys nobilis*) 亦稱黑鱮，又稱花鱮。

硬頸參條魚 (*Hemiculter leucisculus*)。

短尾翹頭魚 (*Culter brevicauda*)。

紅翅 (?) 翹頭魚 (*Culter erythropterus*)。

蒙古翹頭魚 (*Culter mongolicus*)。

嘉興翹頭魚 (*Culter kashinensis*)。

扁魚 (*Chanodichthys bramula*)。

旁皮魚 (*Paracheilognathus imberbis*)。

滬旁皮魚 (*Acanthorhodeus taenianalis*)。

蘇州棍子魚 (*Hemibarbus sochowensis*), 新種。

棍子魚 (*Hemibarbus maculatus*) 又名攙沙郎。

爬虎魚 (*Pseudogobio rivularis*)。

花花媳婦 (*Sarcocheilichthys nigripinnis*)。

泥鰍 (*Misgurnus anguillicaudatus*) 市上亦有出售，作貓之飼料。

鯰魚 (*Parasilurus asotus*) 及鱸絲 (*Pseudobrgrus fulvidraco*) 四季均有，市上亦有出售，均可供食用。

澤魚 (*Hyporhampus sinensis*) 又名長嘴魚，較少，供飼貓用。

黑魚有二種一種，曰七星黑魚 (*Ophicephalus argus*) 有腹鰭，一種曰斑尾黑魚 (*Chana ocellata*)，無腹鰭。

火燒旁皮 (*Macropodus opercularis*) 作貓之飼料。

鱸魚 (*Lateolabrax japonicus*) 供食用，在蘇州不常見。

鰥魚 (*Sinipercachuatsi*) 初夏最多，供食用。據吳君子修調查所得，此魚有二種；一種曰石鰥，居橋下，不他去，故背部帶黑色；尚有一種曰黃鰥，背部帶黃色。

塘鯉魚 (*Eleotris potamophila*) 亦稱鰕虎，甚多，供食用。

小黃魚 (*Eleotris swinhonis*) 作貓之飼料。

河豚 (*Tetraodon ocellatus*) 見於春多之交，可供食用。

FEB 14 1983